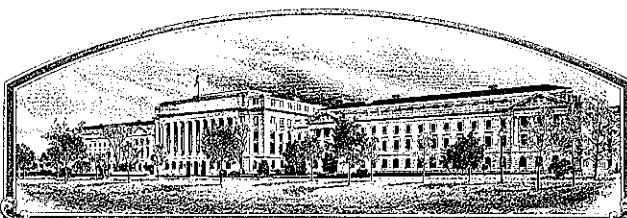


No.



9500304

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Goertzen Seed Research Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR LOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE SEED. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'G1878'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirty-first day of January in the year of our Lord one thousand nine hundred and ninety-seven.

Attest:

Marsba L. Stanton
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Jan Gilchristman
Secretary of Agriculture

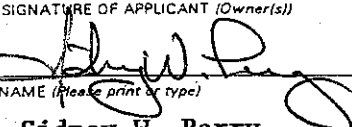
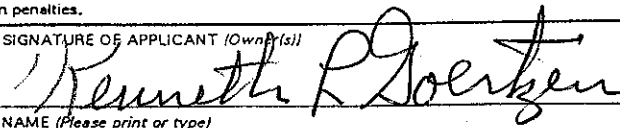
U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Goertzen Seed Research Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER G1878		3. VARIETY NAME G1878 <i>per letter 29 Oct 1996 transcribed Feb 1997</i>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 14604 S. Haven Road Haven, KS 67543		5. TELEPHONE (include area code) 316-465-2675		FOR OFFICIAL USE ONLY PVPO NUMBER 9500304 DATE Sept. 5, 1995 FILING AND EXAMINATION FEE 2450 DATE Sept. 5, 1995 CERTIFICATION FEE 300.00 DATE Dec. 5, 1995	
		6. FAX (include area code) 316-465-2693			
7. GENUS AND SPECIES NAME Triticum aestivum L.		8. FAMILY NAME (Botanical) Gramineae			
9. CROP KIND NAME (Common name) Hard Winter Wheat					
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name) Corporation					
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware			12. DATE OF INCORPORATION Oct. 2, 1991		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Ronald C. Lundquist Fish & Richardson P.C., P.A. 60 South Sixth Street, Suite 3300 Minneapolis, MN 55402				14. TELEPHONE (include area code) 612-335-5070	
				15. FAX (include area code) 612-288-9696	
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)					
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,600 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)					
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act?) <input checked="" type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <i>as per letter 12 Oct 1996</i> <input type="checkbox"/> NO (If "no," go to item 20)					
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED		
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES (If "yes," give names of countries and dates) <input type="checkbox"/> NO					
U.S./August 16, 1995					
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.					
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.					
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT (Owner(s))  NAME (Please print or type) Sidney W. Perry			SIGNATURE OF APPLICANT (Owner(s))  NAME (Please print or type) Kenneth L. Goertzen		
CAPACITY OR TITLE Research Manager		DATE 1/29/96		CAPACITY OR TITLE 1/30/96	

14. Exhibit A Origin & Breeding History of the Variety G1878

This line was the result of a cross between a commercial hard red winter wheat variety, Hawk, and a Goertzen Seed Research experimental line, G62. This initial cross was made in 1985. The G62 parent is a genetically high protein, semi dwarf, hard red winter, bearded wheat with brown glumes and good combining ability. One half of the G62 parent is Plainsman V. Early generation single plant selections that were shorter in height were made from this cross in 1988, and in 1989 a F4 single plant was selected (Sel. 6) with 17 tillers, semi dwarf height, free of leaf and stem rust, bearded with yellow glumes. This selection, G1878, was then tested and increased simultaneously.

The line has appeared stable and uniform during testing and seed increase. Purity is maintained by roguing and isolation. Breeder's seed is maintained by Goertzen Seed Research, the originators of the variety.

FISH & RICHARDSON P.C., P.A.

FISH RICHARDSON & NEAVE
BOSTON
(1916-1969)

FREDERICK P. FISH
(1855-1930)

W.K. RICHARDSON
(1859-1951)

3300 DAIN BOSWORTH PLAZA
60 SOUTH SIXTH STREET
MINNEAPOLIS, MINNESOTA 55402

TELEPHONE: 612/335-5070
FAX: 612/288-9696

COPY

BOSTON
617/542-5070
WASHINGTON, D.C.
202/783-5070

HOUSTON
713/629-5070

SILICON VALLEY
415/322-5070

SOUTHERN CALIFORNIA
619/678-5070

NEW YORK
212/765-5070

January 22, 1996

Our File: 07406/004001

BY FEDERAL EXPRESS

U.S. Department of Agriculture
Plant Variety Protection Office
NAL Building, Room 500
10301 Baltimore Blvd.
Beltsville, MD 20705-2351

Attn: Dr. Alan A. Atchley

PV Application No. 9500304, WHEAT, <G1878>

'G1878' *AAA per letter
02/06/97*

Dear Dr. Atchley:

Pursuant to 7 U.S.C. §2442, Applicants enclose herewith the information requested in the Examiner's letter of September 26, 1995, concerning the above-identified PVP application.

The Examiner indicated that the variety Coulee could not be distinguished from <G1878>. Our information indicates that Coulee is a hard white winter wheat, whereas <G1878> is a hard red winter wheat. Therefore, <G1878> is distinguishable from Coulee.

The Examiner requested information regarding the date <G1878> was first released, used, offered for sale, or marketed. <G1878> was first released and marketed on August 16, 1995, which is less than one year before the effective filing date of the application.

The Examiner requested information to supplement Exhibit A. The complete pedigree for experimental line G62 is as follows: G62 was selected from a cross of Sturdy by Plainsman V. Sturdy was developed by the Texas Agricultural Experiment Station/USDA-ARS and was selected from the following pedigree: Sinvalocho/Wichita//Hope/Cheyenne/3/2*Wichita/4/Seu Seun 27. Plainsman V was described in granted PVP Certificate #7500082 and was deposited in 1977 with the National Seed Storage Laboratory (accession number 92519).

FISH & RICHARDSON P.C., P.A.

Plant Variety Protection Office
January 22, 1996
Page 2

COPY

The type and frequency of variants found in <G1878> are as follows: less than 1 in 1000 bronze chaff plants and less than 1 in 1000 slightly taller plants (3-5 inches).

The selection criteria used in the breeding of <G1878> were: semi-dwarf type, favorable leaf and stem rust reaction, competitive yield performance, adequate protein content, and favorable milling and baking results.

With reference to the color differences in Exhibit B, the following comparisons have been made using the Munsell Book of Color:

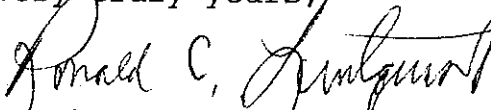
<u>Character</u>	<u>Discovery</u>	<u><G1878></u>
Plant Color at Boot	Hue = 5GY Value = 6 Chroma = 6	Hue = 5GY Value = 5 Chroma = 8
Glume Color	Hue = Y.5 YR Value = 5 Chroma = 6	Hue = 5Y Value = 8 Chroma = 4

The quantitative differences between Discovery and <G1878> in average height and flower characteristics are not being cited as differentiating attributes. Therefore, none of the statistical tests are included in Exhibit B.

The Commissioner requested, in a letter of September 6, 1995, that we complete and return a new application form. An unsigned copy of the revised application form is enclosed with this letter. A signed copy will be submitted as soon as signatures can be obtained.

Thank you very much for your attention to this application. If any other information is required, please feel free to contact me.

Very truly yours,


Ronald C. Lundquist, Ph.D.

RCL/med
3151.M11

14. Exhibit B Novelty of G1878

Most similar variety to G1878 is the variety Discovery (PVP9200033). Both share Plainsman V as an ancestor. Both are semidwarf, bearded, hard red winter wheats with moderate straw strength. Both are bread wheat types.

The following differences are observed between Discovery and G1878 when grown at the same location:

Discovery	G1878
Leaf tip firing present due to same Ne gene (derived from Scout)	Leaf tip firing absent
Excellent mixing tolerance	Satisfactory mixing tolerance
Tapering head	Strap head
Plant color at boot - Yellow green	Plant color at boot - dark green
Glume color-brown	Glume color-yellow
Height-average (35-36")	Height-average (41")
High molecular weight glutenin subunits 2*, 5&10, 7, 8	High molecular weight glutenin subunits 2*, 5&10, 7, 9

14. Exhibit B Continued

Chemical, Milling, and Mixograph Data for G1878 and Discovery in 1993^a

Line	WHEAT			FLOUR			MIXOGRAPH				
	Ash (%)	Pro- tein (%)	Flour Yield (%)	Milling score ^b	Ash (%)	Pro- tein (%)	Color Value ^c	Absorp- tion (%)	Mix Time ^d		Toler- ance
									As Is (min)	Corr. (min)	
G1878	1.45	12.6	77.1	85	0.50	11.9	79	62.8	4.38	4.30	4
Discovery	1.62	15.0	73.9	94	0.45	14.3	84	64.9	6.38	-	5

^a Data expressed on a 14% moisture basis.^b Milling scores (MS) were derived from test weight (TW), flour yield (FY), and the ash and protein conversions. MS=100-[(TW-60) + (82-FY) + 100 (FA - WA/3.9) + 10 [(WP-1)-FP]}; FA=flour ash; WA=wheat ash; FP=flour protein; WP=wheat protein.^c Color values were obtained by an Agron Photoelectric Colorimeter with a modified method (AACC Method 14-30) using flour samples rather than using slurry samples with Agron certified calibration disks "63" for 0% setting and "97" instead of "85" for 100% setting.^d (-) denotes the same mix time on as is basis.^e Mixing tolerance was rated with numbers: 6 for 0; 5 for E; 4 for S; 3 for S-Q; 2 for Q; 1 for Q-U; and 0 for U. O, E, S, Q, and U = outstanding, excellent, satisfactory, questionable, and unsatisfactory quality.

1891.M11

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 SCIENCE DIVISION
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
 WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S) Goertzen Seed Research Inc. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 14604 S. Haven Rd. Haven, KS 67543	FOR OFFICIAL USE ONLY
	PVPO NUMBER 9500304 VARIETY NAME G-1878 9500304 AAA per letter
	TEMPORARY OR EXPERIMENTAL DESIGNATION G1878 29 Oct 1996

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g. or) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____.

Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

1=Common 2=Durum 3=Club 4=Other (SPECIFY) _____

2. VERNALIZATION:

1=Spring 2=Winter 3=Other (SPECIFY) _____

3. COLEOPTILE ANTHOCYANIN:

1=Absent 2=Present

4. JUVENILE PLANT GROWTH:

1=Prostrate 2=Semi-erect 3=Erect

5. PLANT COLOR (boot stage):

1 = Yellow-Green 2 = Green 3 = Blue-Green

6. FLAG LEAF (boot stage):

1 = Erect 2 = Recurved 1 = Not Twisted 2 = Twisted

7. EAR EMERGENCE:

Number of Days Earlier Than Lamar *

Number of Days Later Than Ike *

8. ANTHR COLOR:

1 = YELLOW 2 = PURPLE

9. PLANT HEIGHT (from soil to top of head, excluding awns):

cm Taller Than Ike *

cm Shorter Than Lamar *

1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

13. SEED: (continued)

9500304

E. COLOR

☐ 1 = White 2 = Amber 3 = Red 4 = Other (SPECIFY) _____

F. TEXTURE

☐ 1 = Hard 2 = Soft

G. PHENOL REACTION (see instructions):

☐ 1 = Ivory 2 = Fawn 3 = Light Brown 4 = Dark Brown 5 = Black

 14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)
 PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED
Stem Rust (*Puccinia graminis* f. sp. *tritici*)
☐ 0 _____
Stripe Rust (*Puccinia striiformis*)
☐ 0 _____
Tan Spot (*Pyrenophora tritici-repentis*)
☐ 1 race or strain unknown
Halo Spot (*Selenophoma donacis*)
☐ 0 _____

Septoria nodorum (Glume Blotch)

☐ 3 race or strain unknown

Septoria avenae (Speckled Leaf Disease)

☐ 0 _____

Septoria tritici (Speckled Leaf Blotch)

☐ 1 race or strain unknown
Scab (*Fusarium* spp.)
☐ 0 _____

"Black Point" (Kernel Smudge)

☐ 0 _____

Barley Yellow Dwarf Virus (BYDV)

☐ 1 race or strain unknown

Soilborne Mosaic Virus (SBMV)

☐ 2 race or strain unknown

Wheat Yellow (Spindle Streak) Mosaic Virus

☐ 0 _____

Wheat Streak Mosaic Virus (WSMV)

☐ 1 race or strain unknown

Other (SPECIFY) _____

☐ _____

Other (SPECIFY) _____

☐ _____

Other (SPECIFY) _____

☐ _____
Leaf Rust (*Puccinia recondita* f. sp. *tritici*)
☐ 3 race or strain unknown
Loose Smut (*Ustilago tritici*)
☐ 0 _____
Flag Smut (*Urocystis agropyri*)
☐ 0 _____
Common Bunt (*Tilletia tritici* or *T. laevis*)
☐ 0 _____
Dwarf Bunt (*Tilletia controversa*)
☐ 0 _____
Karnal Bunt (*Tilletia indica*)
☐ 0 _____
Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*)
☐ 1 race or strain unknown

"Snow Molds"

☐ 0 _____
Common Root Rot (*Fusarium*, *Cochliobolus* and *Bipolaris* spp.)
☐ 0 _____
Rhizoctonia Root Rot (*Rhizoctonia solani*)
☐ 0 _____
Black Chaff (*Xanthomonas campestris* pv. *translucens*)
☐ 0 _____
Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)
☐ 0 _____

Other (SPECIFY) _____

☐ _____

Other (SPECIFY) _____

☐ _____

Other (SPECIFY) _____

☐ _____

Other (SPECIFY) _____

☐ _____

9

15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

Hessian Fly (*Mayetiola destructor*)

☐ 0

Other (SPECIFY)

☐

Stem Sawfly (*Cephus* spp.)

☐ 0

Other (SPECIFY)

☐

Cereal Leaf Beetle (*Oulema melanopa*)

☐ 0

Other (SPECIFY)

☐

Russian Aphid (*Diuraphis noxia*)

☐ 0

Other (SPECIFY)

☐

Greenbug (*Schizaphis graminum*)

☐ 0

Other (SPECIFY)

☐

Aphids

☐ 0

Other (SPECIFY)

☐

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

14E Statement of the Basis of Applicant's Ownership of G1878

The initial cross between Hawk and G62 was made by Betty Goertzen, wheat breeder for Goertzen Seed Research. The selection from this cross that became designated as G1878 was made by Kenneth L. Goertzen, who at that time was co-owner of Goertzen Seed Research. Goertzen Seed Research was purchased by new owners in January, 1994 but continues to operate as Goertzen Seed Research. Goertzen Seed Research retains all rights to G1878.